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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
BRANDT, CHRISTOPHER M	
ART UNIT	**PAPER NUMBER**
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/509,867	TAKANO ET AL.	
	Examiner	Art Unit	
	Christopher M. Brandt	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-78* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-78* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 October 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 USC 119(a)-(d), which papers have been placed of record in the application file.

Information Disclosure Statement

The information disclosure statement submitted on October 6, 2005 has been considered by the examiner and made of record in the application file.

Drawings

Figures 10 and 11 should be designated by a legend such as --Prior Art-- and/or –Related Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: High-Speed Downlink Packet Access System, Base Station, Mobile Station, and Communication Control Method during a Soft Handover.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4, 19-22, 38, 46, and 47 are rejected under 35 USC 103(a) as being anticipated by **Chang et al. (US Patent 7,010,318 B2, hereinafter Chang)**.

Consider **claim 1 (and similarly applied to claims 19 and 46)**. Chang discloses a cellular system comprising a mobile station and a plurality of base stations being in a state of soft handover with said mobile station and each setting dedicated channels with respect to said mobile station, wherein said dedicated channels include an uplink and a downlink dedicated channel, the downlink dedicated channel includes transmission power control for the uplink dedicated channel (column 1 line 41 – column 2 line 3, column 3 lines 54-57, read as the power-up/down commands are transmitted using a TPC (Transmission Power Control) bit in a dedicated physical control channel (DPCCH) of a dedicated physical channel (DPCH) established between the transmitter and receiver, where this procedure can take place during a user equipment being located in a soft handover (SHO) region. This procedure occurs by creating a TPC bit considering states of the downlink channel signals received from two or more cells in order to control uplink transmission power), and only the specific base station in the base stations being in the state of soft handover sets a shared channel with respect to said mobile

station to perform transmission of a packet (column 2 lines 51-56, column 5 lines 25-28, read as the UE receives data from only one Node B, even when it is located in the soft handover region because only the Node B managing the best cell having the best reception state among the two or more Node Bs transmits data to the Node B where there is a shared control channel, a channel for transmitting control information for the HS-DSCH, is a dedicated channel assigned to each UE and needs to be subject to transmission power control), said cellular system characterized in that said mobile station comprises transmission power control means for controlling a transmission power of the uplink dedicated channel during reception of said packet based only on the transmission power control information included in the downlink dedicated channel from the packet transmission base station (column 4 lines 11-18, column 5 lines 42-47, read as the UE carries out the transmission power control with only the Node B selected as the best cell where uplink transmission power control is by the information received in the downlink).

Consider **claim 2 and as applied to claim 1 (and similarly applied to claim 20)**. Chang discloses the system characterized in that said packet transmission base station comprises means for controllably changing a target reception quality of said dedicated channel at the packet transmission base station from a first value to a second value greater than said first value during said packet transmission (column 6 lines 41-57, column 7 line 58 – column 8 line 14, read as "power-up" command and Equation 1 indicating the power offset).

Consider **claim 3 and as applied to claim 1 or 2 (and similarly applied to claims 21 and 47)**. Chang discloses the system characterized in that said transmission power control means sets an increasing width of the transmission power of said uplink dedicated channel to be

greater than a decreasing width thereof (column 7 line 64 - column 8 line 14, read as P_{offset} should be 2*3=6, where 6 is interpreted as width since 3 represents time slot duration).

Consider **claim 4 (and similarly applied to claims 22 and 38)**. Chang discloses a cellular system comprising a mobile station and a plurality of base stations being in a state of soft handover with said mobile station and each setting dedicated channels with respect to said mobile station, wherein said dedicated channels include an uplink and a downlink dedicated channel, the downlink dedicated channel includes transmission power control information for the uplink dedicated channel (column 1 line 41 – column 2 line 3, column 3 lines 54-57, read as the power-up/down commands are transmitted using a TPC (Transmission Power Control) bit in a dedicated physical control channel (DPCCH) of a dedicated physical channel (DPCH) established between the transmitter and receiver, where this procedure can take place during a user equipment being located in a soft handover (SHO) region. This procedure occurs by creating a TPC bit considering states of the downlink channel signals received from two or more cells in order to control uplink transmission power), and only the specific base station in the base stations being in the state of soft handover sets a shared channel with respect to said mobile station to perform transmission of a packet (column 2 lines 51-56, column 5 lines 25-28, read as the UE receives data from only one Node B, even when it is located in the soft handover region because only the Node B managing the best cell having the best reception state among the two or more Node Bs transmits data to the Node B where there is a shared control channel, a channel for transmitting control information for the HS-DSCH, is a dedicated channel assigned to each UE and needs to be subject to transmission power control), said cellular system characterized in that the packet transmission base station comprises means for controllably changing a

transmission power of the transmission power control information included in the downlink dedicated channel from a first value to a second value greater than said first value during said packet transmission (column 4 lines 11-18, column 5 lines 42-47, column 6 lines 41-57, column 7 line 58 – column 8 line 14, read as the UE carries out the transmission power control with only the Node B selected as the best cell where uplink transmission power control is by the information received in the downlink. Changing a transmission power from a first value to a second value, which is greater than the first value is read as "power-up" command and Equation 1 indicating the power offset).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 5, 6, 23, 24, 39, and 40 are rejected under 35 USC 103(a) as being unpatentable over **Chang et al. (US Patent 7,010,318 B2, hereinafter Chang)** in view of **Shahidi et al. (US PGPUB 2002/0173309 A1, hereinafter Shahidi)**.

Consider **claim 5 (and similarly applied to claims 23 and 39)**. Chang discloses a cellular system comprising a mobile station and a plurality of base stations being in a state of soft handover with said mobile station and each setting dedicated channels with respect to said mobile station, wherein a power offset is used for balancing transmission powers of said dedicated channels between said base stations being in the state of soft handover (column 1 line 41 – column 2 line 3, column 3 lines 54-57, column 3 line 65 – column 4 line 4, read as the power-up/down commands are transmitted using a TPC (Transmission Power Control) bit in a dedicated physical control channel (DPCCH) of a dedicated physical channel (DPCH) established between the transmitter and receiver, where this procedure can take place during a user equipment being located in a soft handover (SHO) region. This procedure occurs by creating a TPC bit considering states of the downlink channel signals received from two or more cells in order to control uplink transmission power. In addition, a TPC command memory stores the TPC commands output from the demultiplexer, received from the plurality of the Node Bs

where the UE transmission power controller determines a transmission power control offset based on TPC commands stored for a specific duration from a time point where the best cell is changed from the current best cell to the next best cell), and only the specific base station in said base stations being in the state of soft handover sets a shared channel with respect to said mobile station to perform transmission of a packet (column 2 lines 51-56, column 5 lines 25-28, read as the UE receives data from only one Node B, even when it is located in the soft handover region because only the Node B managing the best cell having the best reception state among the two or more Node Bs transmits data to the Node B where there is a shared control channel, a channel for transmitting control information for the HS-DSCH, is a dedicated channel assigned to each UE and needs to be subject to transmission power control), said cellular system characterized in that the packet transmission base station comprises means for controllably changing a value of said power offset from a first value to a second value greater than said first value during said packet transmission (column 4 lines 11-18, column 5 lines 42-47, column 6 lines 41-57, column 7 line 58 – column 8 line 14, read as the UE carries out the transmission power control with only the Node B selected as the best cell where uplink transmission power control is by the information received in the downlink. Changing a transmission power from a first value to a second value, which is greater than the first value is read as "power-up" command and Equation 1 indicating the power offset).

Chang substantially discloses the claimed invention but fails to explicitly teach a reference power.

However, Shahidi disclose a reference power (Shahidi; paragraph 14, read as dynamically adjusting the common reference power).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Shahidi into the invention of Chang in order to effectively cause the transmit power of each base station to converge toward substantially the same value (paragraph 13).

Consider **claim 6 and as applied to claim 5 (and similarly applied to claims 24 and 40)**. Chang and Shahidi disclose the system characterized in that said packet transmission base station further comprises means for controllably changing a value of a transmission power of a downlink dedicated channel from a first value to a second value greater than said first value, simultaneously with increasing the value of said reference power (Shahidi; paragraph 42).

Claims 7, 8, 25, 26, 37, 48, and 49, 70-78 are rejected under 35 USC 103(a) as being unpatentable over **Chang et al. (US Patent 7,010,318 B2, hereinafter Chang)** in view of **Willenegger (US PGPUB 2002/0009061 A1)**.

Consider **claim 7 (and similarly applied to claims 25, 37, 48, 70, 72, and 74)**. Chang discloses a cellular system comprising a mobile station and a plurality of base stations being in a state of soft handover with said mobile station and each setting dedicated channels with respect to said mobile station, wherein said dedicated channels include an uplink and a downlink dedicated channel (column 1 line 41 – column 2 line 3, column 3 lines 54-57, read as the power-up/down commands are transmitted using a TPC (Transmission Power Control) bit in a dedicated physical control channel (DPCCH) of a dedicated physical channel (DPCH)

established between the transmitter and receiver, where this procedure can take place during a user equipment being located in a soft handover (SHO) region. This procedure occurs by creating a TPC bit considering states of the downlink channel signals received from two or more cells in order to control uplink transmission power), these uplink and downlink dedicated channels each include transmission power control information for the other dedicated channel (column 1 lines 63-67, column 2 lines 14-18, read as the UE receives downlink channel signals from two or more cells, measures power levels of the received downlink channel signals, and transmits a TPC bit having a corresponding bit value to the cells through the radio links. In addition, In the case of an uplink, the UE located in the soft handover region may receive TPC commands from two or more cells. The UE then determines whether to increase or decrease the transmission power based on the TPC commands), and only the specific base station in the base stations being in the state of soft handover sets a shared channel with respect to said mobile station to perform transmission of a packet (column 2 lines 51-56, column 5 lines 25-28, read as the UE receives data from only one Node B, even when it is located in the soft handover region because only the Node B managing the best cell having the best reception state among the two or more Node Bs transmits data to the Node B where there is a shared control channel, a channel for transmitting control information for the HS-DSCH, is a dedicated channel assigned to each UE and needs to be subject to transmission power control), said cellular system characterized in that said mobile station comprises means for controllably changing a transmission power of said dedicated channel at said mobile station from a first value to a second value greater than said first value during reception of said packet (column 4 lines 11-18, column 5 lines 42-47, column 6 lines 41-57, column 7 line 58 – column 8 line 14, read as the UE carries out the transmission

power control with only the Node B selected as the best cell where uplink transmission power control is by the information received in the downlink. Changing a transmission power from a first value to a second value, which is greater than the first value is read as "power-up" command and Equation 1 indicating the power offset).

Chang substantially discloses the claimed invention but fails to explicitly teach controllably changing a target reception quality (Chang discloses controllably changing a transmission power).

However, Willenegger discloses controllably changing a target reception quality (paragraph 47, read as the base station is able to determine the target SNR and is able to scale the transmit power for these channels accordingly to achieve the target SNR (paragraph 47).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Willenegger into the invention of Chang in order to maintain the signal quality of a transmission received at the user terminal as close as possible to a target signal-to-noise-plus interference ratio (paragraph 40).

Consider **claim 8 (and similarly applied to claims 26, 49, 71, 73, and 75-78)**. Chang discloses a cellular system comprising a mobile station and a plurality of base stations being in a state of soft handover with said mobile station and each setting dedicated channels with respect to said mobile station, wherein said dedicated channels include an uplink and a downlink dedicated channel (column 1 line 41 – column 2 line 3, column 3 lines 54-57, read as the power-up/down commands are transmitted using a TPC (Transmission Power Control) bit in a dedicated physical control channel (DPCCH) of a dedicated physical channel (DPCH)

established between the transmitter and receiver, where this procedure can take place during a user equipment being located in a soft handover (SHO) region. This procedure occurs by creating a TPC bit considering states of the downlink channel signals received from two or more cells in order to control uplink transmission power), these uplink and downlink dedicated channels each include transmission power control information for the other dedicated channel (column 1 lines 63-67, column 2 lines 14-18, read as the UE receives downlink channel signals from two or more cells, measures power levels of the received downlink channel signals, and transmits a TPC bit having a corresponding bit value to the cells through the radio links. In addition, In the case of an uplink, the UE located in the soft handover region may receive TPC commands from two or more cells. The UE then determines whether to increase or decrease the transmission power based on the TPC commands), and only the specific base station in the base stations being in the state of soft handover sets a shared channel with respect to said mobile station to perform transmission of a packet (column 2 lines 51-56, column 5 lines 25-28, read as the UE receives data from only one Node B, even when it is located in the soft handover region because only the Node B managing the best cell having the best reception state among the two or more Node Bs transmits data to the Node B where there is a shared control channel, a channel for transmitting control information for the HS-DSCH, is a dedicated channel assigned to each UE and needs to be subject to transmission power control), said cellular system characterized in that said mobile station comprises means for producing said power control information on the downlink dedicated channel during reception of said packet based only on power levels of the received downlink channel said mobile station of said dedicated channel from the packet transmission base station (column 1lines 63-67, read as the UE receives downlink channel

signals from two or more cells, measures power levels of the received downlink channel signals, and transmits a TPC bit having a corresponding value to the cells through the radio links).

Chang discloses the claimed invention but fails to explicitly teach a reception quality (Chang discloses measured powered levels).

However, Willenegger discloses a reception quality (paragraph 46, read as the user terminal estimates the SNR of the transmission on the DPCCH/DPDCH and compares the estimated SNR to the target SNR and generates transmit power control commands).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Willenegger into the invention of Chang in order to maintain the signal quality of a transmission received at the user terminal as close as possible to a target signal-to-noise-plus interference ratio (paragraph 40).

Claims 9, 10, 14, 27, 28, 32, 41, 50, 51, 55-66 are rejected under 35 USC 103(a) as being unpatentable over **Chang et al. (US Patent 7,010,318 B2, hereinafter Chang)** in view of **Das et al. (US PGPUB 2003/0157953 A1, hereinafter Das)**.

Consider **claim 9 (and similarly applied to claims 27 and 50)**. Chang discloses a cellular system comprising a mobile station and a plurality of base stations being in a state of soft handover with said mobile station and each setting dedicated channels with respect to said mobile station (column 1 line 41 – column 2 line 3, column 3 lines 54-57, read as the power-up/down commands are transmitted using a TPC (Transmission Power Control) bit in a dedicated physical control channel (DPCCH) of a dedicated physical channel (DPCH)

established between the transmitter and receiver, where this procedure can take place during a user equipment being located in a soft handover (SHO) region. This procedure occurs by creating a TPC bit considering states of the downlink channel signals received from two or more cells in order to control uplink transmission power), wherein only the specific base station in the base stations being in the state of soft handover sets a shared channel with respect to said mobile station to perform transmission of a packet (column 2 lines 51-56, column 5 lines 25-28, read as the UE receives data from only one Node B, even when it is located in the soft handover region because only the Node B managing the best cell having the best reception state among the two or more Node Bs transmits data to the Node B where there is a shared control channel, a channel for transmitting control information for the HS-DSCH, is a dedicated channel assigned to each UE and needs to be subject to transmission power control), and said mobile station transmits data including reception confirmation notification information about said packet to the packet transmission base station at a transmission power obtained by adding a predetermined offset power to a transmission power of an uplink dedicated channel, said cellular system characterized in that said mobile station comprises offset power determining means for determining an increment of said offset power depending on reception qualities of downlinks of said respective base stations being in the soft handover (column 3 lines 65 – column 4 line 11, column 5 line 65 – column 6 line 9, read as the transmission power control method is to enable the best cell to correctly receive ACK/NACK information necessary for the HARQ, so that the UE performing uplink transmission power control based on the data received from the old best cell can optimally communicate with the next best cell as quickly as possible, where the transmission power control is based on TPC commands output from the demultiplexer, received from the plurality of the

Node Bs (i.e. downlink). A UE transmission power controller determines a transmission power control offset based on TPC commands).

Chang discloses the claimed invention but fails to explicitly state (HS-PDSCH), and HS-PDSCH dedicated control channel (HS-DPCCH).

However, Das discloses (HS-PDSCH), and HS-PDSCH dedicated control channel (HS-DPCCH) (paragraph 47, read as power offset for HS-DPCCH in HSDPA, The base station can also signal the power offset for the HS-DPCCH).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Das into the invention of Chang in order to provide a direct signaling and addressing mechanism between a base station and a mobile station using existing control channel structures and formats (paragraph 9).

Consider **claim 14 (and similarly applied to claims 32 and 41)**. Chang discloses a cellular system comprising a mobile station and a plurality of base stations being in a state of soft handover with said mobile station and each setting dedicated channels with respect to said mobile station (column 1 line 41 – column 2 line 3, column 3 lines 54-57, read as the power-up/down commands are transmitted using a TPC (Transmission Power Control) bit in a dedicated physical control channel (DPCCH) of a dedicated physical channel (DPCH) established between the transmitter and receiver, where this procedure can take place during a user equipment being located in a soft handover (SHO) region. This procedure occurs by creating a TPC bit considering states of the downlink channel signals received from two or more cells in order to control uplink transmission power), wherein only the specific base station in the

base stations being in the state of soft handover sets a shared channel with respect to said mobile station to perform transmission of a packet (column 2 lines 51-56, column 5 lines 25-28, read as the UE receives data from only one Node B, even when it is located in the soft handover region because only the Node B managing the best cell having the best reception state among the two or more Node Bs transmits data to the Node B where there is a shared control channel, a channel for transmitting control information for the HS-DSCH, is a dedicated channel assigned to each UE and needs to be subject to transmission power control), and said mobile station transmits an data including information of reception confirmation notification (ACK/NACK) about said packet to the packet transmission base station at a transmission power obtained by adding a predetermined offset power to a transmission power of an uplink dedicated channel (column 3 lines 65 – column 4 line 11, column 5 line 65 – column 6 line 9, read as the transmission power control method is to enable the best cell to correctly receive ACK/NACK information necessary for the HARQ, so that the UE performing uplink transmission power control based on the data received from the old best cell can optimally communicate with the next best cell as quickly as possible, where the transmission power control is based on TPC commands output from the demultiplexer, received from the plurality of the Node Bs (i.e. downlink). A UE transmission power controller determines a transmission power control offset based on TPC commands), said cellular system characterized in that said packet transmission base station comprises packet transmission control means for controlling transmission of said packet depending on a reliability of a judgment result about said reception confirmation notification (column 6 line 58 – column 7 line 10, read as the information that must be correctly transmitted to the next best cell,

ACK/NACK information, may not be correctly transmitted to the next best cell. Therefore, a proper transmission power offset may be determined).

Chang discloses the claimed invention but fails to explicitly teach an (HS-PDSCH) and an HS-PDSCH dedicated control channel (HS-DPCCH).

However, Das discloses (HS-PDSCH), and HS-PDSCH dedicated control channel (HS-DPCCH) (paragraph 47, read as power offset for HS-DPCCH in HSDPA, The base station can also signal the power offset for the HS-DPCCH).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Das into the invention of Chang in order to provide a direct signaling and addressing mechanism between a base station and a mobile station using existing control channel structures and formats (paragraph 9).

Consider **claim 55 (and similarly applied to claims 59, and 63)**. Chang discloses a cellular system comprising a mobile station and a base station setting dedicated channels with respect to said mobile station, wherein said dedicated channels include an uplink and a downlink dedicated channel (column 1 line 41 – column 2 line 3, column 3 lines 54-57, read as the power-up/down commands are transmitted using a TPC (Transmission Power Control) bit in a dedicated physical control channel (DPCCH) of a dedicated physical channel (DPCH) established between the transmitter and receiver, where this procedure can take place during a user equipment being located in a soft handover (SHO) region. This procedure occurs by creating a TPC bit considering states of the downlink channel signals received from two or more cells in order to control uplink transmission power), the downlink dedicated channel includes

transmission power control information for the uplink dedicated channel, the uplink dedicated channel comprises a dedicated control channel (DPCCH) and a dedicated information channel (DPDCH) (column 1 lines 63-67, column 2 lines 14-18, read as the UE receives downlink channel signals from two or more cells, measures power levels of the received downlink channel signals, and transmits a TPC bit having a corresponding bit value to the cells through the radio links. In addition, In the case of an uplink, the UE located in the soft handover region may receive TPC commands from two or more cells. The UE then determines whether to increase or decrease the transmission power based on the TPC commands), said base station sets a shared channel with respect to said mobile station to perform transmission of a packet (column 2 lines 51-56, column 5 lines 25-28, read as the UE receives data from only one Node B, even when it is located in the soft handover region because only the Node B managing the best cell having the best reception state among the two or more Node Bs transmits data to the Node B where there is a shared control channel, a channel for transmitting control information, is a dedicated channel assigned to each UE and needs to be subject to transmission power control), and said mobile station transmits the dedicated information channel to the packet transmission base station at a transmission power obtained by adding a predetermined first offset value to a transmission power of the uplink dedicated control channel, said cellular system characterized in that said mobile station controls the transmission power of the DPCCH depending on said transmission power control information and comprises transmission power suppressing means for suppressing the transmission power of the DPDCH if a transmission power of signals including the DPCCH and the DPDCH exceeds a predetermined maximum transmission power when transmitting the DPDCH at the transmission power obtained by adding said first offset value to the transmission

power of the DPCCH (column 3 lines 65 – column 4 line 11, column 5 line 65 – column 6 line 9, read as the transmission power control method is to enable the best cell to correctly receive ACK/NACK information necessary for the HARQ, so that the UE performing uplink transmission power control based on the data received from the old best cell can optimally communicate with the next best cell as quickly as possible, where the transmission power control is based on TPC commands output from the demultiplexer, received from the plurality of the Node Bs (i.e. downlink). A UE transmission power controller determines a transmission power control offset based on TPC commands).

Chang discloses the claimed invention but fails to explicitly state (HS-PDSCH), and HS-PDSCH dedicated control channel (HS-DPCCH).

However, Das discloses (HS-PDSCH), and HS-PDSCH dedicated control channel (HS-DPCCH) (paragraph 47, read as power offset for HS-DPCCH in HSDPA, The base station can also signal the power offset for the HS-DPCCH).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Das into the invention of Chang in order to provide a direct signaling and addressing mechanism between a base station and a mobile station using existing control channel structures and formats (paragraph 9).

Consider **claim 10 and as applied to claim 9 (and similarly applied to claims 28 and 51)**. Chang and Das disclose the system characterized in that said offset power determining means measures reception powers of common pilot signals in said downlinks and determines the

increment of said offset power depending on measurement results thereof (column 3 lines 65 – column 4 line 11, column 7 line 64 – column 8 line 14, also see Equation 1) .

Consider **claim 56 and as applied to claim 55 (and similarly applied to claims 60 and 64)**. Chang and Das disclose a cellular system characterized in that said mobile station further transmits an HS-PDSCH dedicated control channel (HS-DPCCH) including transmission control information for said packet at a transmission power obtained by adding a predetermined second offset value to the transmission power of the uplink dedicated control channel, and comprises transmission power suppressing means for suppressing the transmission power of the DPDCH if a transmission power of signals including the DPCCH, the DPDCH, and the HS-DPCCH exceeds the predetermined maximum transmission power when transmitting the DPDCH at the transmission power obtained by adding said first offset value to the transmission power of the DPCCH (Chang; column 3 line 65 – column 4 line 11).

Consider **claim 57 and as applied to claim 55 or 56 (and similarly applied to claims 61 and 65)**. Chang and Das disclose the system characterized by comprising a plurality of base stations being in a state of soft handover with said mobile station and setting dedicated channels with respect to said mobile station, wherein only the specific base station in the base stations being in the state of soft handover sets the HS-PDSCH with respect to said mobile station to perform the packet transmission, and said mobile station comprises transmission power control means for controlling the transmission power of the DPCCH based only on the transmission power control information included in the downlink dedicated channel from the packet transmission base station (column 7 line 64 – column 8 line 14).

Consider **claim 58 and as applied to claims 55 or 56 (and similarly applied to claims 62 and 66)**. Chang and Das disclose the system characterized in that said transmission control information is reception confirmation notification information (Chang; column 5 line 63 – column 6 line 9, Das; paragraph 47).

Claims 11, 29, 52 are rejected under 35 USC 103(a) as being unpatentable over **Chang et al. (US Patent 7,010,318 B2, hereinafter Chang)** in view of **Das et al. (US PGPUB 2003/0157953 A1, hereinafter Das)** and further in view of **Jetzek et al. (US Patent 6,546,252 B1, hereinafter Jetzek)**.

Consider **claim 11 and as applied to claim 10 (and similarly applied to claims 29 and 52)**. Chang and Das substantially disclose the claimed invention but fail to explicitly teach given the measurement result corresponding to each of the base stations in the soft handover is RP.sub.i (i is an integer of 1 to N, and N is the number of the base stations) and the measurement result corresponding to the packet transmission base station is RP.sub.1, said offset power determining means sets said increment to 10.times.log.sub.10[max(RP.sub.i-)/RP.sub.1](dB) where max(RPi) represents a maximum value of RPi.

However, Jetzek discloses given the measurement result corresponding to each of the base stations in the soft handover is RP.sub.i (i is an integer of 1 to N, and N is the number of the base stations) and the measurement result corresponding to the packet transmission base station is RP.sub.1, said offset power determining means sets said increment to 10.times.log.sub.10[max(RP.sub.i-)/RP.sub.1](dB) where max(RPi) represents a maximum value of RPi (column 4 line 55 – column 5 line 9, also see claim 10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Jetzek into the invention of Chang as Das in order to determine an acceptable signal quality for a connection between a particular mobile station and base transceiver station (column 4 lines 55-59).

Claims 12, 30, and 53 are rejected under 35 USC 103(a) as being unpatentable over **Chang et al. (US Patent 7,010,318 B2, hereinafter Chang)** in view of **Das et al. (US PGPUB 2003/0157953 A1, hereinafter Das)** and further in view of **Shahidi et al. (US PGPUB 2002/0173309 A1, hereinafter Shahidi)**.

Consider **claim 12 (and similarly applied to claims 30 and 53)**. Chang discloses a cellular system comprising a mobile station and a plurality of base stations being in a state of soft handover with said mobile station and each setting dedicated channels with respect to said mobile station (column 1 line 41 – column 2 line 3, column 3 lines 54-57, read as the power-up/down commands are transmitted using a TPC (Transmission Power Control) bit in a dedicated physical control channel (DPCCH) of a dedicated physical channel (DPCH) established between the transmitter and receiver, where this procedure can take place during a user equipment being located in a soft handover (SHO) region. This procedure occurs by creating a TPC bit considering states of the downlink channel signals received from two or more cells in order to control uplink transmission power), wherein only the specific base station in the base stations being in the state of soft handover sets a shared channel with respect to said mobile station to perform transmission of a packet (column 2 lines 51-56, column 5 lines 25-28, read as the UE receives data from only one Node B, even when it is located in the soft handover region

because only the Node B managing the best cell having the best reception state among the two or more Node Bs transmits data to the Node B where there is a shared control channel, a channel for transmitting control information for the HS-DSCH, is a dedicated channel assigned to each UE and needs to be subject to transmission power control), and said mobile station transmits data including reception confirmation notification information about said packet to the packet transmission base station at a transmission power obtained by adding a predetermined offset power to a transmission power of an uplink dedicated channel, said cellular system characterized in that said mobile station comprises offset power determining means for determining an increment of said offset power depending the number of power-up and the number of power-down commands (column 3 lines 65 – column 4 line 11, column 5 line 65 – column 6 line 9, read as the transmission power control method is to enable the best cell to correctly receive ACK/NACK information necessary for the HARQ, so that the UE performing uplink transmission power control based on the data received from the old best cell can optimally communicate with the next best cell as quickly as possible, where the transmission power control is based on TPC commands output from the demultiplexer, received from the plurality of the Node Bs (i.e. downlink). A UE transmission power controller determines a transmission power control offset based on TPC commands).

Chang discloses the claimed invention but fails to explicitly teach an (HS-PDSCH) and an HS-PDSCH dedicated control channel (HS-DPCCH).

However, Das discloses (HS-PDSCH), and HS-PDSCH dedicated control channel (HS-DPCCH) (paragraph 47, read as power offset for HS-DPCCH in HSDPA, The base station can also signal the power offset for the HS-DPCCH).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Das into the invention of Chang in order to provide a direct signaling and addressing mechanism between a base station and a mobile station using existing control channel structures and formats (paragraph 9).

In addition, Chang and Das substantially teach the claimed invention but fail to explicitly teach that the power offset depends on the number N of said base stations being in the soft handover (Chang discloses that the power offset depends on the number of TPC commands).

However, Shahidi discloses that the power offset depends on the number N of said base stations being in the soft handover (paragraph 11, read as during a soft handoff, each base station in the active set for a mobile station transmits the same data to the mobile station, where the mobile station then determines the power control commands).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to have incorporated the teachings of Shahidi into the invention of Chang and Das in order maintain the balance of the transmit power between the active base stations (paragraph 11).

Claims 13, 31, and 54 are rejected under 35 USC 103(a) as being unpatentable over **Chang et al. (US Patent 7,010,318 B2, hereinafter Chang)** in view of **Das et al. (US PGPUB**

2003/0157953 A1, hereinafter Das) in view of **Shahidi et al. (US PGPUB 2002/0173309 A1, hereinafter Shahidi)** and further in view of **Jetzek et al. (US PGPUB 6,546,252 B1, hereinafter Jetzek)**.

Consider **claim 13 and as applied to claim 12 (and similarly applied to claims 31 and 54)**. Chang, Das, and Shahidi disclose the claimed invention but fail to explicitly teach the system characterized in that said offset power determining means sets said increment to 10.times.log.sub.10N (dB).

However, Jetzek discloses the system characterized in that said offset power determining means sets said increment to 10.times.log.sub.10N (dB) (column 4 line 55 – column 5 line 9, also see claim 10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Jetzek into the invention of Chang as Das in order to determine an acceptable signal quality for a connection between a particular mobile station and base transceiver station (column 4 lines 55-59).

Claim 67 is rejected under 35 USC 103(a) as being unpatentable over **Hamalainen (US PGPUB 2003/0021243)** in view of **Chang et al. (US Patent 7,010,318 B2, hereinafter Chang)**.

Consider **claim 67**. Hamalainen discloses a communication control method for use in performing data communication between a mobile station and a data communication base station, said communication control method characterized by, when transmitting from the mobile station via a specific channel a reception confirmation notification (ACK/NACK) indicative of

whether or not data is received without error, determining a downlink quality of said ACK/NACK based only on a reception state of a channel from said data communication base station other than said specific channel during soft handover, and transmitting said ACK/NACK according to the downlink quality power (paragraphs 34, 36, read as a link adaptation can be based on acknowledgement/negative acknowledgment (ACK/NACK) signals generated by the mobile station upon receiving the downlink signal transmitted by the base station, where this procedure could occur in soft handoff).

Hamalainen substantially discloses the claimed invention but fails to explicitly teach transmission power.

However, Chang discloses transmission power (column 2 lines 13-23, read as the UE then determines whether to increase or decrease the transmission power based on the TPC commands).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Chang into the invention of Hamalainen in order to compensate initial transmission power for the next best cell based on the determined power control offset (column 4 lines 8-11).

Claim 68 and 69 are rejected under 35 USC 103(a) as being unpatentable over **Hamalainen (US PGPUB 2003/0021243)** in view of **Chang et al. (US Patent 7,010,318 B2, hereinafter Chang)**.

Consider **claim 68 and as applied to claim 67**. Hamalainen and Chang substantially disclose the claimed invention but fail to explicitly teach that said specific channel is an HS-DPCCH, and further, said channel other than said specific channel is a DPCCH from said data transmission base station.

However, Das discloses that said specific channel is an HS-DPCCH, and further, said channel other than said specific channel is a DPCCH from said data transmission base station (paragraph 47, read as power offset for HS-DPCCH in HSDPA, The base station can also signal the power offset for the HS-DPCCH).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Das into the invention of Hamalainen and Chang in order to provide a direct signaling and addressing mechanism between a base station and a mobile station using existing control channel structures and formats (paragraph 9).

Consider **claim 69 and as applied to claim 68**. Hamalainen, Chang, and Das disclose the method characterized by, in said data transmission base station, referring to a reliability of a reception judgment result about the ACK/NACK of the HS-DPCCH and judging that it is always NACK when the reliability is low, to thereby reduce a NACK error rate (Hamalainen; paragraph 37, Das; paragraph 47).

Claims 15-18 are rejected under 35 USC 103(a) as being unpatentable over **Chang et al. (US Patent 7,010,318 B2, hereinafter Chang)** in view of **Das et al. (US PGPUB 2003/0157953 A1, hereinafter Das)** and further in view of **Hamalainen (US PGPUB 2003/0021243 A1)**.

Consider **claim 15 and as applied to claim 14 (and similarly applied to claims 33 and 42)**. Chang and Das substantially disclose the claimed invention but fail to explicitly teach that said packet transmission control means performs a control following the judgment result about said reception confirmation notification when said reliability is greater than a predetermined threshold value.

However, Hamalainen discloses that said packet transmission control means performs a control following the judgment result about said reception confirmation notification when said reliability is greater than a predetermined threshold value (paragraph 37).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Hamalainen into the invention of Chang and Das in order to perform link adaptation to improve downlink quality control (paragraph 36).

Consider **claim 16 and as applied to claim 14 (and similarly applied to claims 34 and 43)**. Chang and Das disclose the claimed invention but fail to explicitly teach said reliability is smaller than a predetermined threshold value, said packet transmission control means judges that said reception confirmation notification is always no (NACK).

However, Hamalainen discloses said reliability is smaller than a predetermined threshold value, said packet transmission control means judges that said reception confirmation notification is always no (NACK) (paragraphs 26, 37).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Hamalainen into the invention of Chang and Das in order to perform link adaptation to improve downlink quality control (paragraph 36).

Consider **claim 17 and as applied to claims 14 to 16 (and similarly applied to claims 35 and 44)**. Chang and Das disclose the claimed invention but fail to explicitly teach said packet transmission control means performs a transmission control depending on said reliability when having judged that said reception confirmation notification is yes (ACK).

However, Hamalainen discloses said packet transmission control means performs a transmission control depending on said reliability when having judged that said reception confirmation notification is yes (ACK).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Hamalainen into the invention of Chang and Das in order to perform link adaptation to improve downlink quality control (paragraph 36).

Consider **claim 18 and as applied to claims 14 to 16 (and similarly applied to claims 36 and 45)**. Chang, Das, and Hamalainen teach that said reliability is a reception quality of said HS-DPCCH (Das; paragraph 47).

Conclusion

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Christopher M. Brandt

C.M.B./cmb

December 17, 2007

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